UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/155,676	01/04/1999	DAVID WALLACH	WALLACH=21	8997

1444 7590 06/02/2004

BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER	
EPPS FORD, JANET L	

ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/155,676	WALLACH ET AL.	
	Examiner	Art Unit	
	Janet L. Epps-Ford, Ph.D.	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-16,20-22,30,43-50,52-60,62-71,73-75 and 77-89* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *62,64,70 and 71* is/are allowed.

6)☒ Claim(s) *13-16,20-22,30,43-50,52,54,55,59,60,63,69 and 77-79* is/are rejected.

7)☒ Claim(s) *46,53,56-58,65-68 and 73-75* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Notice to Comply*.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8-04-03 has been entered.

2. The previous indication of allowability of claim 54 is withdrawn in light of the new grounds of rejection set forth below.

Response to Arguments

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 13-16, 20-22, 30, 43-45, 47-50, 54-55, 59-60, 63, 69 and 77-79 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record set forth in the Official Action mailed 9-05-02, and those set forth in the Official Action mailed 6-27-03.

Applicant's arguments filed 8-04-03 have been fully considered but are not persuasive. Applicants argue that since Applicants have amended claim 69 to remove the limitation wherein the polypeptide of claim 69 encompasses an amino acid sequence of a fragment of (b), wherein (b) is an analog of (a), claim 69 is therefore allowable since this is the only portion of claim 69 found objectionable by the Examiner. However, Applicant's arguments and amendments have not overcome the previous grounds of rejection set forth in the prior Office Action.

It remains that the instant claims 43-44, 49, 55 and 69, in particular claim 69 recite a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF-κB, comprising an amino acid sequence of a fragment of (a), wherein (a) recites the amino acid sequence of SEQ ID NO: 2, an amino acid sequence encoded by the nucleotide sequence of SEQ ID NO: 6, or the amino acid sequence of SEQ ID NO: 5. First, it is noted that there is no length assigned to said fragment, therefore the term may encompass fragments at small as 2 amino acids, wherein the recited polypeptide of unknown size comprises said fragment.

Claim 20 recites a NIK polypeptide, wherein said polypeptide has at least "part of" the amino acid sequence of SEQ ID NO: 7. However, again the length of said "part of" is not defined, therefore it can encompass at least a single amino acid. Therefore, the NIK polypeptide of claim 20 may encompass a single amino acid of SEQ ID NO: 7.

Claim 22 and 50 recite antibodies and "active fragments" of said antibodies that are specific for the polypeptides of the invention. However, apart from further trial and error experimentation, Applicants have not demonstrated that they were in possession of the full scope of "active fragments" that are specific for the polypeptides of the invention, that are encompassed by the claims.

Claim 30 recites "a sequence encoding TRAF2," however the structure of a TRAF2 DNA sequence, that is required to practice the claimed method is not recited in the claims. Therefore, the TRAF2 encoding sequence encompasses all allelic, polymorphic, and splice variants of TRAF2 encoding sequences, including all species variants of the TRAF2 encoding sequence. However, the specification as filed does not describe the structures of the full scope of sequences encompassed by this claim.

Claim 45 recites a method that comprises the use of a polypeptide comprising at least a portion of TRAF2 having the amino acid residues 222-501 of TRAF2, and claim 48 recites a method for identifying and producing a molecule capable of directly or indirectly either inhibiting or decreasing the cellular activity which is changed or mediated by NIK, comprising screening for a molecule capable of either inhibiting or decreasing activities which is changed or mediated by NIK. However, there is no specific amino acid sequence set forth in these claims that correspond to TRAF2 (claim 45) or NIK (claim 48). Therefore, these claims encompass TRAF2 and NIK proteins, including all allelic and polymorphic variants, including proteins isolated from all species expressing this protein. Additionally, in regards to the "portion" language recited in claims 45 and 47, the claims do not indicate the length of said portion, therefore it can read on "portions" of any length, wherein said polypeptide used in the claimed method may comprise any length of said "portions." The specification as filed does not provide sufficient description, such that the skilled artisan would be able to predict the full scope of polypeptides encompassed by the instant claims.

As stated above, the previous indication of the allowability of claim 54 is withdrawn. Claim 54 recites: "A DNA sequence encoding a polypeptide in accordance with claim 69. The

polypeptides encompassed by claim 69 includes polypeptides comprising an amino acid sequence of a fragment of (a), wherein (a) recites the amino acid sequence of SEQ ID NO: 2, an amino acid sequence encoded by the nucleotide sequence of SEQ ID NO: 6, or the amino acid sequence of SEQ ID NO: 5. However, the genus of polypeptides encompassed by claim 69 encompass those polypeptides comprising any size fragment of the polypeptides of (a), including polypeptides comprising at least a 2 amino acid fragment since there is no size limitation of the fragment set forth in the claims. Moreover, the size of the polypeptides comprising said fragments is not defined. Although, Applicants provide means for assaying the ability of said polypeptides to bind TRAF2 and either inhibit or increase the activity of NF-kB, the number of polypeptides encompassed by claim 69 that must be tested by trial and error experimentation to identify polypeptides having the recited function is astronomical. The claimed genus of polypeptides recited in claim 69 must be tested by trial and error experimentation since there is no direct correlation between the structures of these numerous polypeptides and the recited function. Therefore, since the genus of polypeptides encompassed by claim 69 are not adequately described, the DNA sequence encoding them as set forth in claim 54 are also not adequately defined. Moreover, due to the degeneracy of the genetic code, there are an exponential number of polynucleotides that may function to encode a single amino acid sequence. Additionally, depending upon how a sequence is processed there could be multiple introns in the pre-mRNA encoding a polypeptide, the sequence of which cannot be predicted by the structure of the amino acid sequence. Therefore based upon these considerations, the amino acid sequences of the polypeptides encompassed by claim 69, cannot be used to predict the structures of the full scope of DNA sequences which encode these polypeptides.

5. Claims 77-79 recite DNA sequences encoding a polypeptide in accordance with claims 73, 74, or 75. Additionally, claim 63 recites a DNA sequence encoding the polypeptide of claim 62. As stated above, due to the degeneracy of the genetic code, there are an exponential number of polynucleotides that may function to encode a single amino acid sequence. Additionally, depending upon how a sequence is processed, there could be multiple introns in the pre-mRNA encoding a polypeptide, the sequence of which cannot be predicted by the structure of the amino acid sequence. Therefore based upon these considerations, the amino acid sequences of the polypeptides encompassed by claims 73-75 cannot be used to predict the structures of the full scope of DNA sequences that encode these polypeptides.

6. Additionally, claim 59 (part (b)) reads on a DNA sequence that encodes a polypeptide that is purely defined by function. However, Applicants have not provided a direct correlation between the recited function, namely wherein said polypeptide binds TRAF2 and either inhibits or increases the activity of NF-kB and is encoded by a DNA sequence capable of binding to a DNA sequence capable of binding to the nucleotide sequence of SEQ ID NO: 6. The full scope of DNA sequences can only be identified by trial and error experimentation.

7. See MPEP § 2163, which states "[A] biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence."

8. In the instant case, the specification as filed provides no indication of what specific polypeptide or polynucleotide structures correlate with the claimed activity, specifically those which modulate NF-κB activity and bind TRAF2. It is apparent that further experimentation is

necessary to isolate the full scope of compounds encompassed by the instant. Moreover, as stated in the Office Action mailed 9-26-02, and as maintained in the Office Action mailed 6-27-03, due to the limited structural information regarding what amino acid residues may be deleted substituted or inserted in the polypeptides according to the present invention, wherein said polypeptide retains the ability to bind TRAF2 and inhibit or increase the activity of NF-κB, Applicant's specification does not provide sufficient description for the broad genus of polypeptides encompassed by the instant claims. Applicant's arguments do not take the place of evidence that Applicant's were in possession of the full scope of the claimed invention at the time of filing of the instant application.

9. Moreover, in regards to Applicant's arguments that the finality of the prior Office Action should be withdrawn, since claims 45 and 48 were rejected under 35 USC § 112, 1st paragraph for lack of description, it was noted in the prior Office Action, that claims 45 and 48 were amended in the response filed 4-15-03. As stated in the prior Office Action, Applicant's amendment necessitated the new grounds of rejection, therefore the Finality of the prior Office Action is considered proper.

10. On 2-09-01 Applicants sought to initiate an interference between the current application and US Patents 5,843,721 and 5,844,073, wherein the proposed count was claim 3 or 4 of US 5,843,721, or claim 54 of the instant application; or all of claims 1-15 of 5,843,721 and at least claim 54 of the instant application. Additionally, in the Remarks section of the reply filed 2-09-01, Applicants stated that claims 65-68 have been added in anticipation of an interference proceeding with US Patents 5,843,721 and 5,844,073. First it is noted that the prior indication of allowability for claim 54 is withdrawn, therefore the initiation of interference proceedings will be

postponed until the indication of allowability of all pending claims. If Applicants wish to file a continuation claiming only the allowable subject matter in the instant application, or cancel all non-allowable claims in the instant application, interference proceedings can then be initiated. However, until all issues are resolved in the instant application the prosecution of this application will continue, and the interference initiation will be postponed.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 20 and 52 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claim 20 recites: "A NIK polypeptide according to claim 53, wherein said polypeptide has at least part of the amino acid sequence of SEQ ID NO: 7." Claim 53 recites: "A polypeptide in accordance with claim 69, wherein said polypeptide of (a) is the polypeptide encoded by the nucleotide sequence of SEQ ID NO: 6." To the extent that the structure of the NIK polypeptide of claim 20 has at least part of the amino acid of SEQ ID NO: 7 is vague and indefinite, since according to Figure 6 of the specification as filed SEQ ID NO: 7 is the predicted amino acid sequence encoded by SEQ ID NO: 6. It is unclear what other polypeptides may be encompasses by claim 20.

14. Claim 52 recites "A polypeptide in accordance with claim 69, wherein said polypeptide of (a) is the sequence encoded by SEQ ID NO: 3." There is insufficient antecedent basis for the limitation "the sequence encoded by SEQ ID NO: 3" in the claim 52, because claim 69 does not recite "SEQ ID NO: 3" in section (a).

Claim Objections

15. Claims 70 is objected to because of the following informalities: Claim 70 makes reference to Tables 1A and 1B. According to MPEP § 2173.05(s) "Where possible, claims are to be complete in themselves. Incorporation by reference to a specific figure or table 'is permitted only in exceptional circumstances where there is no practical way to define the invention in words and where it is more concise to incorporate by reference than duplicating a drawing or table into the claim. Incorporation by reference is a necessity doctrine, not for applicant's convenience.'"

Sequence Information

16. This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. For example, at page 36, line 31, and page 37, line 31, peptides of 4 amino acids are disclosed in the specification, however these sequences do not appear on Applicant's sequence listing.

17. A complete response to this Office Action requires that Applicants comply with the sequence rules, and that pending rejections be addressed. Any response that does not address all of these issues will be held as non-responsive. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Conclusion

18. Claim 62, 64 and 70-71 are free of the prior art, and allowable.

19. Claim 52 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

20. Claims 46, 53, 56-58, 65-68, and 73-75 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

21. Claim 70 is objected to for minor formalities, however would be allowable if amended to overcome this objection.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Epps-Ford, Ph.D. whose telephone number is 571-272-0757. The examiner can normally be reached on Monday-Saturday, Flex Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John L. LeGuyader can be reached on 571-272-0760. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Janet L. Epps-Ford, Ph.D.
Examiner
Art Unit 1635

Notice to Comply	Application No.	Applicant(s)	
	09/155,676	Wallach et al.	
	Examiner	Art Unit	
	Janet Epps-Ford	1635	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).

☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).

☒ 7. Other : Sequence disclosures on pages 36-37 are not included on Sequence Listing.

Applicant Must Provide:

☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.

☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216
For CRF Submission Help, call (703) 308-4212
PatentIn Software Program Support
Technical Assistance.....703-287-0200
To Purchase PatentIn Software.....703-306-2600

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR REPLY